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Production of Kale

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PRODUCTION OF KALE

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Economic Importance

The kales are a group of nonheading plants of the cabbage family. Botanically the plants are related to brussels sprouts but differ from them in that the axillary buds produce no heads. If the season is sufficiently long these buds elongate, giving the plant a bunching appearance. This group of plants is undoubtedly closer akin to wild cabbage than the other members of the cabbage family. As a garden crop kale is grown chiefly for the leaves of the plant, which are used as a potherb or "greens." The larger kinds of kale are grown in some sections of the country as a forage crop.

Although the crop can be grown in many parts of the country, it is grown most extensively in the South and along the South Atlantic seaboard. Extensive commercial production of kale for the market in the United States is confined almost wholly to the trucking area around Norfolk, Va., and a small area on Long Island, N. Y. This extreme localization of the industry is due primarily to economic and climatic conditions, which make extensive commercial production unprofitable in many sections where the crop can be grown.

Since kale is a coarse, bulky, low-priced commodity, in greatest demand during the winter and early spring, profitable production on a large scale is restricted to areas having mild winters and cheap transportation facilities. The growing of kale for market is not generally profitable where the crop cannot be grown during the winter months and harvested and marketed at a low cost. Despite this extreme localization of large-scale production, kale is well adapted for growing in the home garden for family use in most parts of the United States.

Types and Varieties

The kales exhibit a wide variation in size and shape of the leaves of the different types. Different forms of the plant are known as collard, tree kale, thousand-headed kale, and marrow kale, and there are other less important variations.

The types most commonly grown for greens include the Scotch and Siberian kales, the leaves of which are finely dissected and curled. There are both tall and dwarf forms of Scotch kale, but it is the latter that is grown most extensively for market in the large kale-growing sections.

The best varieties of kale grown for greens include Dwarf Green Curled Scotch, Dwarf Blue Curled Scotch, Tall Green Curled Scotch, and Early Curled Siberian.

The Dwarf Green Curled Scotch is a dwarf bright-green kale (fig. 1). It is hardy, and its low-spreading habit of growth gives the stalk con-

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siderable protection during cold weather. It is considered by some to be inferior in quality to the Siberian kale, but it is the most extensively grown for market. Large quantities are shipped from the South to northern markets during the fall and winter. The attractive appearance of the finely divided and curled leaves is doubtless responsible for much of its popularity. This variety is one of the best for general planting.

The Dwarf Blue Curled Scotch is very similar to the Dwarf Green Curled Scotch except that the leaves are of a deeper rather bluish green instead of the bright or yellowish green of the other. It will stand somewhat longer than the Dwarf Green Curled Scotch in the late winter or spring without losing its deep-green color.

Siberian kale, frequently called Dwarf Curled Siberian or Early Curled Siberian, is a very hardy sort, with broad thick leaves, which

FIGURE 1.—Dwarf Green Curled Scotch kale.

are dissected and curled to a less extent than those of the Scotch varieties. The color is bluish green. This variety is somewhat less attractive in appearance than the Scotch varieties, but it is hardier, holds its color longer, and does not shoot to seed so early in the spring. For these reasons it may be well to plant a portion of the crop to this variety, if the particular markets on which it is to be sold do not discriminate against it because of its appearance.

The leaves of Tall Green Curled Scotch are essentially the same as those of the Dwarf Green Curled Scotch, but the plant is different in that it grows to a height of 2 to 3 feet, producing an abundance of leaves along the tall stem. As the stem increases in height, leaves may be harvested from time to time, leaving only a tuft of leaves at the top. A planting of this variety in the home garden will yield a supply of greens over a considerable period of time.

In the dwarf sorts the entire plant is usually harvested by cutting it at the surface of the soil.

Soil and Fertilizer Requirements

The kales can be grown on any good garden soil. While the crop does well on the light sandy and sandy loam soils in the Norfolk and Long Island districts, it cannot be said that such soils are best for maximum yields. Like cabbage, kale thrives best on a deep, fertile, well-drained, and moderately heavy soil.

In common with most crops that are grown for their leaves, kale requires an abundant supply of immediately available plant food for best results. Where it can be obtained cheaply, well-rotted manure should be applied, and it is usually advisable to supplement it with superphosphate. Cow manure has been reported as a satisfactory fertilizer for kale in the Pacific Northwest. Where heavy applications of manure are made, precaution should be taken to control clubroot and maggot, as these are liable to be troublesome. On soils reasonably well supplied with organic matter good crops of kale can be produced with commercial fertilizer without the use of manure. An application of 500 pounds per acre of a commercial fertilizer containing 5 percent of nitrogen, 10 percent of phosphorus, and 5 percent of potash in the row at seeding time, followed by an application of 600 to 1,200 pounds of a 9–6–5 fertilizer when the plants are 6 inches high, has given good results in the kale-growing section in Virginia. Complete fertilizers have given better results than those containing only one or two of the fertilizing elements.

Culture

The culture of kale is very similar to the culture of cabbage. While the large commercial plantings are grown almost wholly for winter use, kale can be planted in the spring and grown as a summer crop where the temperature is not too high. Unlike its close relatives, cauliflower, broccoli, and brussels sprouts, kale is somewhat resistant to the heat and drought of summer, although a long period of hot weather is likely to produce a low-quality product.

For a summer crop, the seed may be planted in early spring in a hotbed or coldframe and transplanted in the same way as cabbage; but because it is hardy and will withstand considerable cold, kale seed is usually planted in drills where the crop is to be grown, thus avoiding the labor and expense of transplanting. The summer crop should be planted in drills about 2½ feet apart, as soon as the soil can be worked in the spring, about 1 ounce of seed being used for each 1,000 feet of row. A quarter of a pound of seed is enough to produce plants to set an acre where transplanting is practiced. If a continuous supply of tender greens is desired, several plantings should be made at intervals of about 10 days.

The winter or early spring crop is seeded in the fall, usually on raised beds or on slight ridges for drainage. The Scotch kales are usually grown for the winter and spring crop. In the latitude of Norfolk the Scotch kale should be seeded from the first of August to the first of September; the Siberian can be planted a little later. About 1½ pounds of seed of the Siberian is sufficient to plant an acre. The Scotch kale is particularly subject to attacks by insects; hence it should be seeded very thickly, from 3 to 5 pounds of seed being used per acre.

The quality of kale is improved by not-too-severe frost. While the crop withstands mild winters, the plants make very little growth after the weather becomes cold. Since the profit depends on a maximum bulk of greens per acre, it is essential that the seeding be done in time for the plants to reach a good size before growth is checked by low temperature.

The plants should be thinned to 10 to 15 inches apart in the row if the entire plant is to be cut at once, as is done where the crop is grown for market. If very large plants are desired so that the individual leaves may be cut, as is sometimes done in the home garden, the plants should be thinned to 12 to 18 inches apart in the row. The rows should be from 16 to 30 inches apart, depending on whether the crop is to be tilled by hand or horse-cultivated. In commercial plantings the plants and rows should be as close as economic handling will permit, in order to get the maximum yield of greens per acre. The crop should be cultivated and the weeds kept down as is done with cabbage. The early cultivations may be relatively deep, but late in the season the cultivation should be shallow, to avoid injury to the roots.

In the commercial production of kale some system of rotation should be practiced. The cruciferous crops (cabbage, cauliflower, turnips, rape, mustard, radishes, etc.) should not be grown in the rotation with kale, as many of the crops of this family are hosts for diseases and insects that attack kale. Much of the benefit of crop rotation is lost if crops of the same family are grown at short intervals in the rotation.

Harvesting and Marketing

Kale is prepared for the market by cutting the dwarf sorts near the ground, trimming away a few of the lower leaves that may have turned slightly yellow and then packing in hampers, bushel baskets, or ventilated barrels. Recently the greater part of the kale crop has been packed in bushel baskets having covers. The kale is sometimes hauled to a packing shed where it is washed and packed. Where the crop is being harvested during the winter it is usually packed in the field without washing. The tall-growing sorts are gone over from time to time and the lower leaves removed for marketing, the main crown and stem being left to produce additional leaves.

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